Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 17, with the following amended paragraph:

Modern roll milling equipment utilizes contiguous rollers with varying sized corrugations and varying sized roller gap spacings to achieve the desired particle size fractionation. Typically, mills employ rollers in series with increasingly narrow gaps in a gradual milling process. More specifically, the various parts of the corn kernel are segregated and removed to differing processing pathways, often referred to as streams. Initially, after cleaning the hard outer shell, the kernel is fractured via a mechanical process thereby freeing and removing the germ from the remaining parts of the kernel – a step called degermination. The remaining parts of the kernel are broken up by a series of rollers. As this material is processed, the hard outer shell ~~(bran) flakes are removed~~ is removed in the form of bran flakes, and the remaining soft and hard endosperm are further separated into differing streams by passing through a series of rollers and sifters which separate product by particle sizes. The end products of the dry corn milling operation are bran, grits, meal, flour, and high fat germ.

Please replace the paragraph beginning at page 2, line 5, with the following amended paragraph:

A flow scheme typical of prior art mills is illustrated in U.S. Patent No. 5,250,313. In ~~Figure 5, of~~ Figure 5 of the '313 patent (reproduced herein as Figure 2), the incoming corn is cleaned, washed, tempered to the appropriate moisture content, fractured or degerminated, and dried. Various designs exist to carry out the step of degermination. For example, the Ocrim degerminator uses a spinning rotor having combination blades to operate against a horizontal, perforated cylinder that only allows partial kernels to pass. The rotor and breaker bars are set to break the corn against a spiral rotor and a cutting bar. Another known degerminator is the Beall degerminator. In the Beall degerminator, grinding occurs through an abrasive action of kernel against kernel, and kernel against a nested conical surface and screen. Impact-type degerminators are also used. An example is the Entoletor

degerminator as illustrated in Fig. 3. The Entoletor includes a vertical drive shaft that operates a rotor. Kernels are fed downwardly towards the rotor where they are forced outwardly by centrifugal motion to impact a liner surface.

Please replace the paragraph beginning at page 3, line 18, with the following amended paragraph:

After break rolling, the further-broken particles are separated, typically by a sifting process. From there, larger particles are further rolled in a subsequent break roller (and the further-broken particles are again sifted), or they are passed on to drying or cooling steps or additional sifting steps to isolate finished products (flour, meal, grits, etc.). Typical finished-product requirements may be found generally in 21 CFR §§ 137.215-285 (1993). Of course other products may be desired by particular purchasers. The remaining particles that fail to pass the post germ sifting steps are typically sent to a germ handling process (labeled oil recovery in ~~Figure 1~~ Figure 2). The finer particles obtained from the germ roller siftings are processed in a manner generally similar to the finer particles from the break rollers.

Please replace the paragraph beginning at page 4, line 13, with the following amended paragraph:

Nevertheless, even in the prior art "shortened" mill flow regimes, inefficiencies remain. For example, U.S. ~~Patent No~~ Patent No. 4,189,503 (a parent from which the '313 patent is a continuation-in-part), teaches the use of a preferred degermination and rolling process to avoid breakage of the germ. These patents also teach the separation of degermination products into three streams, one of which is a "fine" stream relative to the others (see Figures 6, 7, and 8 of the '313 patent and accompanying text). The '313 and '503 patents specifically teach the reintroduction of this fine stream into the other less carefully graded streams after the other streams have been subjected to various other steps, such as tempering and drying (See Claim 8 of the '503 patent). The '313 and '503 patents therefore specifically teach the separation or gradation of post degermination product for the purpose of avoiding the addition of moisture to the separated fines (See '313 patent, Col. 11, Lines 4-14) followed by the subsequent reintroduction of the fine stream into a mixed

stream. With only a reference to fines, these patents do not teach or provide motivation to isolate finished product streams as early in the milling process as a post degermination sifting. In fact, the '313 patent teaches a process wherein the product stream from the degerminator to the first break roll comprises bran, endosperm and germ. In addition, the reintroduction of the sifted "fines" streams into other streams "contaminates" the sifted stream and increase the flow across subsequent sifters.

Please replace the paragraph beginning at page 6, line 7, with the following amended paragraph:

The present invention is a short flow corn mill having a dramatically reduced number of process steps with a commensurate reduction in processing and handling equipment, process monitoring and maintenance labor costs, and process space requirements. This mill design utilizes fewer, but more aggressive break subsystems instead of 5 gradual break subsystems to appropriately shorten the flow while providing exceptional quality and yield performance. The present invention may employ zero to three break rollers in series (or more if parallel operations or redundancies are desired for system ~~stability, etc,~~ stability, etc., preferably from 1 to 3 break rollers. Finished product is withdrawn from process streams when it is first separated, without further intermixing of already separated streams and without a need for further production sifting. This separation occurs early in the short mill process – as early as separation of the degermination stream. In addition, an embodiment of the present invention includes the diversion of other streams at early points in the milling process to a separate hammer-mill process for the production of flour. This diversion of product to a hammer-mill process additionally eliminates product from the stream and further reduces the amount of handling, intermixing, and possible contamination of already separated streams with product of different gradations. Further, these diversions reduce the flow on rollers and on later portions of the mill. Therefore, efficiency is achieved by the rapid isolation and removal of finished product from the stream. Further, yield as well as efficiency is improved. Average corn milling yields for this industry are 180#s (#s representing pounds) ~~(180#'s of raw corn to produce 100#'s~~ (180#s of raw corn to produce 100#s of

finished product). The new short flow milling technology produces finished product with a 129# yield which is the best in the industry (it is believed that the industry best has been 135 prior to the new short flow technology).

Please replace the paragraph beginning at page 7, line 21, with the following amended paragraph:

Fig. 3 is a front elevational view of a prior art Entoletor impact ~~degerminator~~ degerminator.

Please replace the paragraph beginning at page 8, line 15, with the following amended paragraph:

Because the corn kernel's constituent parts, as illustrated in Fig. 1 and as discussed above, comprise separate components of distinct character, each absorbs moisture differently and this differential absorption impacts degermination efficacy. For example, the pericarp or bran coat may be brittle without tempering, but tempering creates a more pliable bran coat that is more likely to be removed intact or as a particle of larger size. Similarly, tempering may aid the release of the germ still in connection with the tip-cap. This allows the removal of the ~~tip cap~~ tip-cap with the germ and a reduction in the number of black tip-caps that may be further milled and result in discoloration of the finished product. In fact, the '313 patent teaches tempering as a method for ~~the facilitating~~ facilitating the shortened process. However, tempering necessarily increases production costs through energy expense for drying, and tempering is not necessary to practice the present invention.

Please replace the paragraph beginning at page 9, line 3, with the following amended paragraph:

After cleaning, and the optional and/or desired pre-treatment, the corn is degerminated. In the currently preferred embodiment, the corn is degermed without the use of tempering and is accomplished with an impact degerminator. This preferred method of degermination typically achieves breakage of the kernel into relatively large pieces, dislodging the ~~germ.Degermination~~ germ. Degermination is

followed by a separation step. Degermination may be followed by a drying step prior to separation if tempering is elected, or drying may occur later.

Please replace the paragraph beginning at page 9, line 17, with the following amended paragraph:

The medium granulated streams from the hominy grader are sent ~~to directly~~ directly to aggressive 2nd and 3rd (in series) break roll subsystems via aspirators. When sent directly to the 2nd break roll subsystem, the stream does not pass first through the 1st break roll subsystem. When sent directly to the 3rd break roll subsystem, the stream does not pass first through either the 1st or 2nd break roll subsystems. Therefore, the present invention allows for the processing of a greater volume without increasing ~~a greater load~~ the load on a particular roller. The aspiration step helps to break apart combined particles and further separate any remaining bran, germ or other non-endosperm material from the endosperm material. Preferred aspirators comprise cascading angled surfaces having periodic ports in the sidewalls to allow a cross stream of air to "blow" loosened bran from the falling particles. The liftings removed via aspiration may be directed to bran processing as a high value input.

Please replace the paragraph beginning at page 11, line 7, with the following amended paragraph:

Although the present invention is described with reference to a sharp meal obtained between number 30 and number 62 wire screens, meal may be classified or obtained from other ranges ~~as in known~~ as is known to those in the art. For example, a meal top screen may range from about a number 30 to about a 46 and a meal bottom screen may range from about a 46 to about a 72. Similarly flour may be that portion that passes screens ranging from about a number 46 screen to about a number 72 screen. Therefore, although specific number wire mesh screens are referenced herein to describe the preferred embodiments, it is understood that the present invention may be practiced to achieve alternate finished product particle profiles.

Please replace the paragraph beginning at page 11, line 15, with the following amended paragraph:

The first break roller typically employs rollers having 14 corrugations per inch with a dull to dull arrangement. The roller distance is typically adjusted after production begins. These adjustments allow operators to achieve target percentages for the differently sized particles coming off the rollers – i.e., the percentage of the roller output that falls into each screen size in the post-roller sifting step. It is, however, to be understood that the corrugations, roller set-up and product output goals disclosed herein are preferred embodiments and that the present invention is intended to encompass those changes instituted to maximize the overall mill output of particular product streams (meal, ~~four~~ flour, etc.).

Please replace the paragraph beginning at page 13, line 4, with the following amended paragraph:

In another preferred embodiment, illustrated in Fig. 6, the streams from the gravity table separator are further divided to include diversion to a gravity table germ aspirator. From the gravity table germ aspirator, product is directed to a gravity table germ roller and sifter. The gravity table roller preferably includes 12 corrugations per inch. The gravity table germ roller sifter employs a number 12, 30, and 62 wire mesh screen. Flour and meal finished products are directed onward as before. The overs of the number 12 screen are directed to germ or oil recovery processing, and the overs of the number 30 screen are directed onward to third break rollers via aspiration. The roller setting data, corrugation data, and roller arrangement for this preferred embodiment are provided in ~~Figure 7~~ Table 1. The preferred roller specifications presented herein for the break rollers are more typical of those roller specifications applied in later roller stages of a typical prior art system.